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ABSTRACT

In this paper, two major schools of thought regarding disaster and disaster assistance are identified and examined in order to bring to light their underlying assumptions about assistance and development in the Third World. The first section discusses the context of the problem, citing figures and presenting charts to illustrate the scope and extent of recent disasters throughout the Third World. In the remaining two sections, each of the two approaches to disaster assistance is reviewed. The first approach is that of the human ecologists, who examine the human response to disasters, presenting models of purposeful and nonpurposeful responses within a cultural context. This group emphasizes factors important to the response of the system to stress, rather than factors relating to the cause of that stress. This approach--the dominant school of thought about disaster for decades--focuses on modes of disaster prevention or disaster relief, and as such it places little emphasis on education. The second school of thought, the "marginalists," focus on the underlying causes of large-scale disasters, examining the socioeconomic conditions of a country as they relate to the physical environment. This school, while recognizing the technical and technological contributions of the human ecologists, posits that disasters are not random natural accidents; rather, they are fundamentally tied to both a deteriorating physical environment and oppressive socioeconomic conditions. A five-page bibliography is appended. (TE)

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Educational Policy and the Two Major Approaches to Disaster Relief in the Third World

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Comparative and International Education Society, Northeast Regional Meeting (November 22, 1985, Weston, Mass.)

EA 018 544

I. Introduction

Disasters are powerful events which hurt increasingly larger numbers of people. This paper examines that increase and the response by the international community to disasters. Private voluntary organizations, governmental bodies, both international and domestic, and agencies within the United Nations systems are involved to an ever larger degree in disaster relief. The kind of intervention deemed necessary is determined by a number of factors including type of event, the geographic region, and local vulnerability. How "disaster" is defined and what causes are attributed to it determine if and how an agency might prevent or mitigate the harmful effects. The kind of education and training necessary is also determined by how one defines the nature of the problem.

In this paper two major schools of thought regarding disaster and disaster assistance are identified and examined with the intention of bringing to light their underlying assumptions concerning assistance and development generally in the Third World. The central thesis revolves around the educational policies which each of the schools of thought would pursue. This paper is organized first to explain the context of the problem of disasters in the Third World as it exists today. In the remaining two major sections each of the two approaches to disaster assistance is reviewed and their assumptions about disasters, relief, development, and most importantly for this paper, the role of education are laid out.

The examination of disaster assistance is used to illustrate a larger

question about the results of education and training in the context of relief aid. Such aid, because it is called humanitarian, is usually considered to be politically neutral and free from any particular ideology. This paper is an attempt to begin a critique of such efforts so that a clearer picture of the nature of different kinds of aid emerges and the role of education can be better understood.

II. The Extent of the Problem

In 1974 hurricanes of roughly equivalent force occured in two very different parts of the world. The first struck Darwin, Australia, the second hit the eastern coast of Honduras. Darwin was hit by Tropical Cyclone Tracy on Christmas Eve, 1974 while Hurricane Fifi struck Honduras in September of the same year. Both sites are located in major tropical storm zones and have adequate warning facilities. Both places experienced similar wind speeds and equal amounts of destruction-- estimated at over 80 percent of the impacted area. Approximately 8000 of the 850,000 victims died in Honduras compared to 50 of 47,000 in Darwin. Those injured by Fifi numbered 130,000 while those injured by Tracy totaled 1,012. Damage estimates put the figures at $450 million in Honduras and $500 million in Darwin. Similar comparisons exist between earthquakes in California and Managua, Nicaragua where Managua was struck by an earthquake lower on the Richter scale than one which hit San Fernando, and yet suffered deaths 100 times greater and injuries ten times higher than those in San Fernando (Kates,1980).

This example is used to illustrate the markedly different effects of similar natural events which struck a developed and developing country. Disasters and their resultant suffering have increased in number and severity in the last fifty years. One estimate offers that in the decade 1964-1974 the world suffered more than 400 natural disasters, resulting in 3.5 million deaths, over 400 million people affected, and $11 billion in damage (Brown, 1979). This increase, however, is not evenly distributed throughout the world but instead, is found primarily in developing nations.

It is very difficult to find reliable disaster statistics on a global scale, and those available are generally not comprehensive. In some cases, sources limit themselves to particular kinds of disasters, in other cases only certain geographical regions are examined (e.g., little is published of events in the Soviet Union). Disasters with sudden impacts are the dominant focus while others which occur more slowly (e.g., drought) are not always included. The disaster statistics used in this paper, unless otherwise noted, come from three major sources: The League of Red Cross and Red Crescent Societies (Geneva) and the U.S. Office of Foreign Disaster Assistance (OFDA) both quoted by Hagman(1984), and research by Sheehan and Hewitt (1969).

The statistics deal with only certain types of disasters including: flood, storm, earthquake, drought/famine, and civil strife/conflict. While the sources cited here point to clear upward trends, it should be noted that to a certain extent this may be influenced by the growth of the Red Cross and improved worldwide information networks which together would increase the

amount of information and data available on these problems. These trends, then, should be viewed critically and should not be taken as finely accurate. Nevertheless, some point to such marked increases that their sources suggest that they may be regarded as strong, fairly reliable indicators.

Figure 1

"Average Recorded Annual Disaster Events"

The information in Figure 1 shows floods both as the most frequent disaster as well as that one whose occurence has increased most. Tropical cyclones are second (included in storm events of which it is the major part). The category "tropical cyclone" includes: typhoons, hurricanes, and cyclones which are, by and large, the same phenomena. Their names differ by geographic region of occurence.

Figure 2

"Killed in Disasters 1960- 1970"

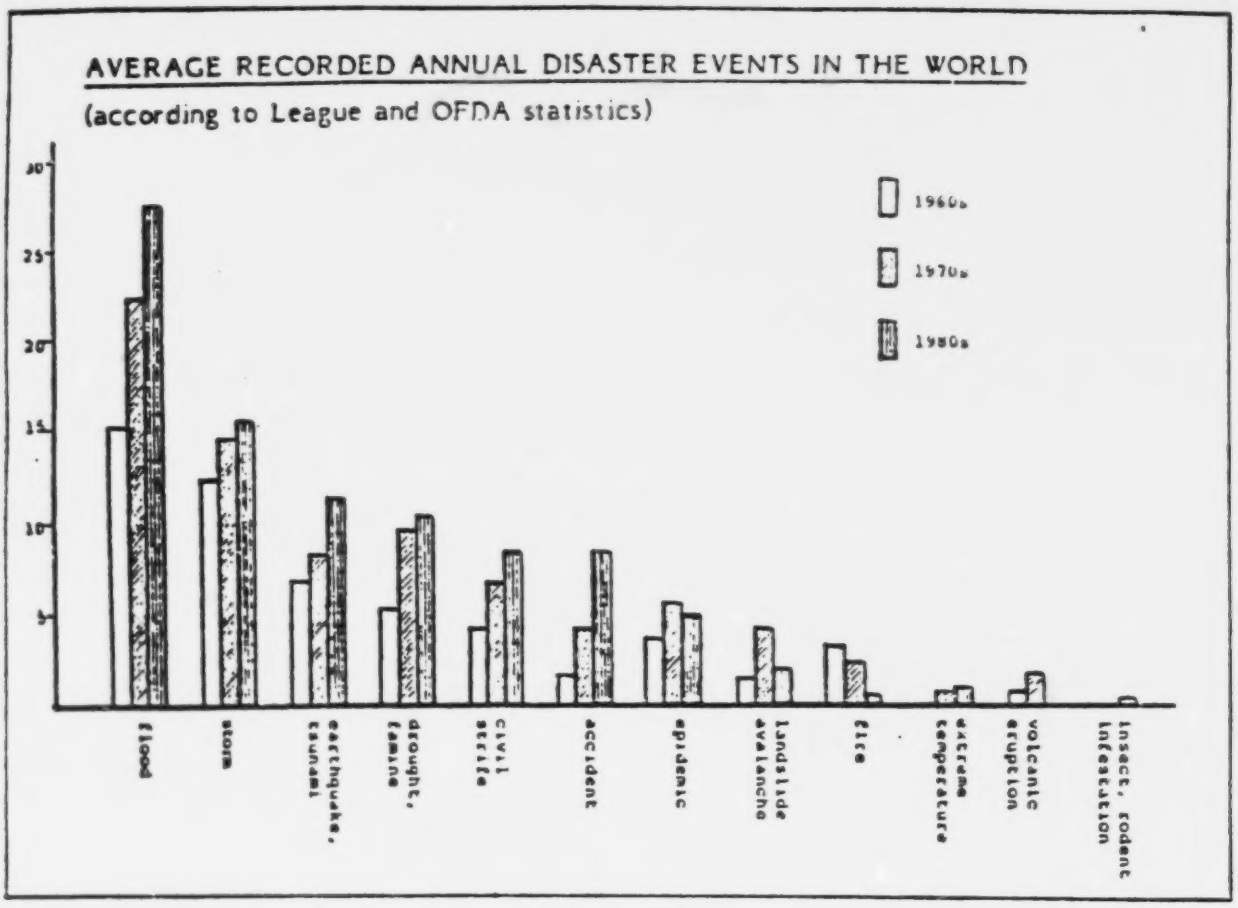

Figure 1

Source: Hagman, Gunnar, et al. Prevention Better Than Cure: Report on Human and Environmental Disasters in the Third World. Swedish Red Cross, Geneva, 1984.

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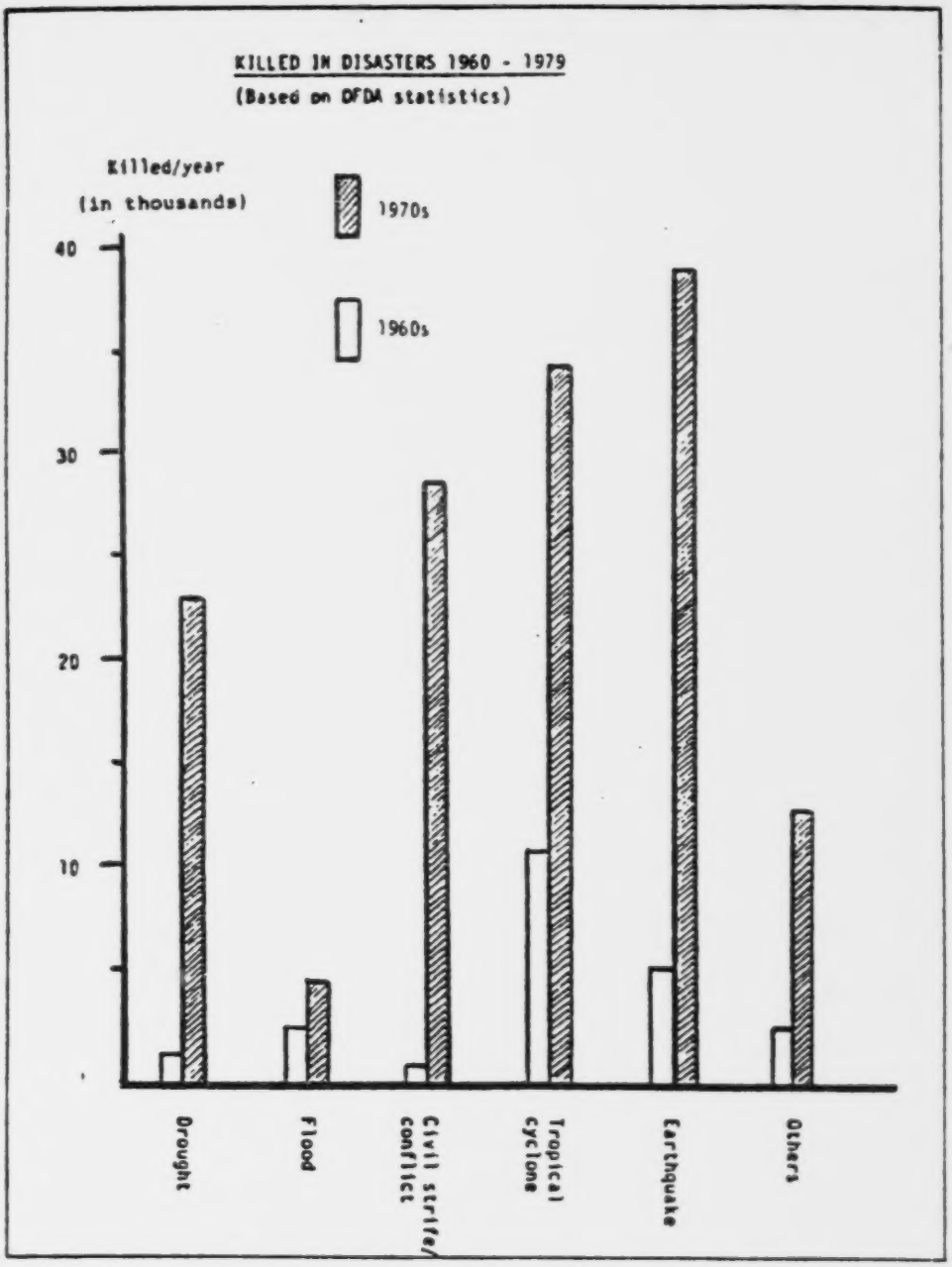

Figure 2

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Figure 2 shows the number of deaths directly related to these events. There is a clear and dramatic increase in all categories. According to these statistics, earthquakes surpassed tropical cyclones as the greatest cause of death. It should be noted, however, that sixty percent of all earthquake deaths were caused by the Tangshan quake in China in 1976 where, according to Chinese officials, 242,000 lives were lost (OFDA figures state the death toll as 665,237). During this same period a single powerful tropical cyclone in Bangladesh dramatically increased the total figures of deaths by storms of this kind. In 1970 this cyclone took between 200,000 and 300,000 lives. These two single events add dramatically to the statistics of those killed and injured in disasters. Yet even if these cases were not included, figures would still show an increase in number and severity of disasters.

The Sahelian and Ethiopian droughts in the 1970s were responsible, according to conservative OFDA figures, for 200,000 deaths. These, in deadly partnership with other drought disasters, resulted in a twenty-three-fold increase in deaths from the sixties to the seventies.

Figure 3

"Average Number of People Affected Per Year by Disasters"

The picture changes sharply when one examines the size of the affected

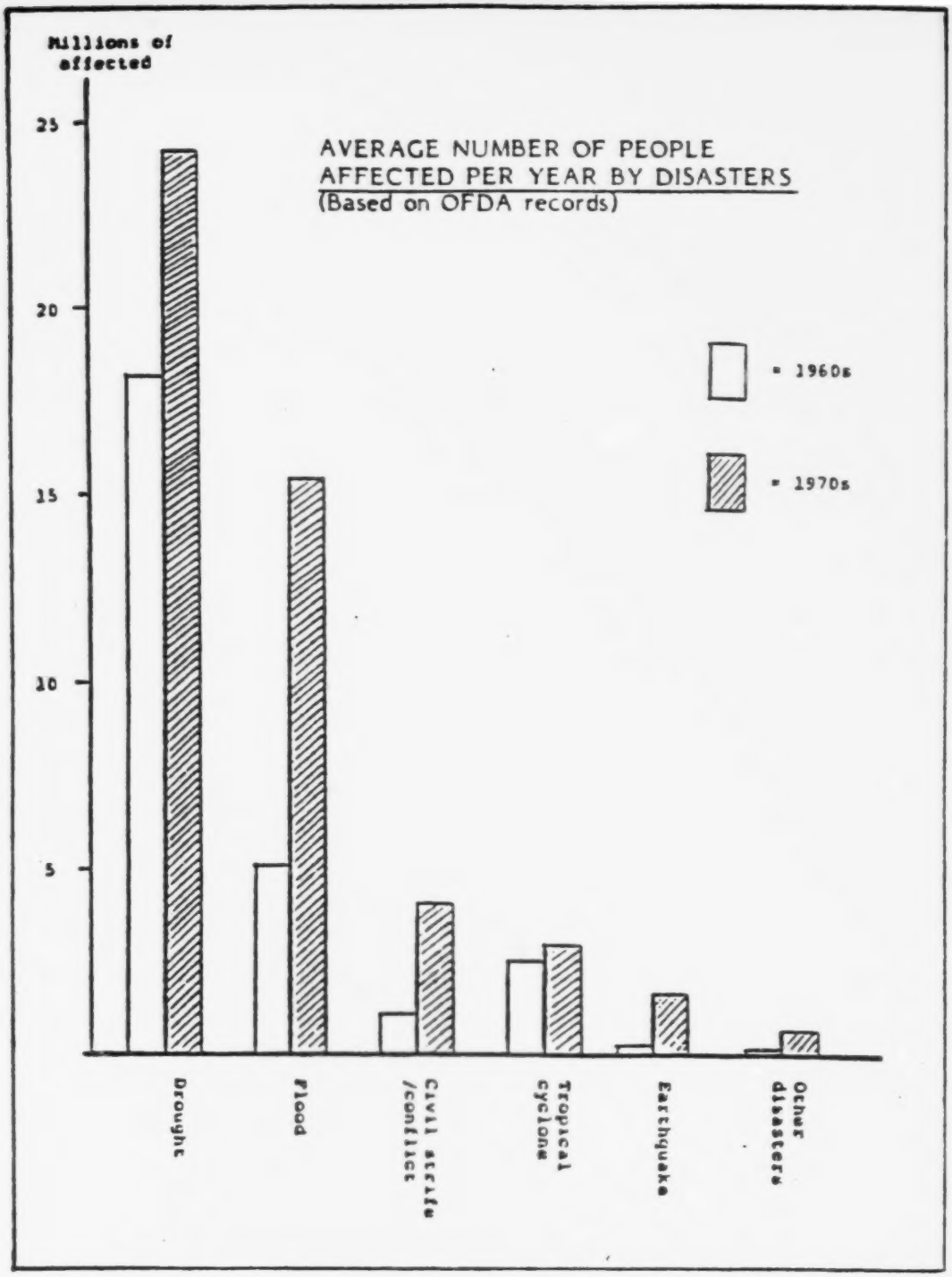
Millions of affected
25
20
15
10
5
AVERAGE NUMBER OF PEOPLE
AFFECTED PER YEAR BY DISASTERS
(Based on OFDA records)
= 1960s
= 1970s
Drought
Flood
Civil strife /conflict
Tropical cyclone
Earthquake
Other disasters

Figure 3

population rather than specifically those who were killed. While the term "affected" is vague and statistics may be educated guesses in some cases, this part of the records provides very useful, if rough, information. Figure 3 shows the average annual number of people affected for the different types of disaster events. It shows that drought and floods are the major hazards in terms of number of people affected. The greatest increase appears to be in floods, both in terms of frequency and people affected.

Other evidence poits to similar conclusions. Bindi V. Shah of the London School of Economics updated several surveys of global hazards which occured between 1947 and 1980. In his report he defined a major disaster as one which satisfied at least one of the following conditions:

- At least 3,600,000 U.S. dollars damage, or
- At least 100 people dead, or
- At least 100 people injured.

He included seventeen natural hazards but excluded droughts because of the difficulty in defining their beginning and end. Based on Shah's observations, the frequency of disasters and the numbers of people killed have been increasing in all sudden impact disasters since 1976. Of all major disasters, 31 percent were due to floods, 20 percent due to tropical cyclones, and 17 percent were earthquakes. His report makes clear that while floods were the highest in number of occurence, they accounted for only 16 percent of all deaths. Tropical cyclones and earthquakes accounted for 40 percent and 37 percent respectively. Shah also underscores that the death

toll was highest in developing, low-income countries (Shah,1983). Of course, the addition of drought data would certainly change these figures.

Given the uncertainties of the data collected on disasters, there are some clear indications which appear, and from which a few generalizations can be made. It appears that all major types of disasters are increasing both in frequency and in numbers of people affected and killed. Of these, droughts and floods affect far more people than the other types of disasters. Floods appear to have the greatest rate of increase in frequency and numbers affected, while droughts affect the largest number of people and show a marked increase in this respect. An important point is that the majority of all disaster victims belong to the poorest countries (Hagman,1984). This can be seen clearly in figures 4-7.

A remarkable note to be inserted here is that these increases in disaster events occur without a parallel increase in the number of natural events. In other words, scientists working with seismology, meteorology, and climatology maintain that there has been no marked change in the average numbers and behaviors of earthquakes, tropical cyclones, or in the climate over the years (Hagman,1984). Shah writes in his conclusion that, "Two points may be concluded from this study: the number of disasters is increasing and high death tolls are still a characteristic of less developed, low income countries.... It is not major changes in the earth's climate and structure that have led to an increase in disasters, but the concentration of social and economic activity in disaster-prone areas." (Shah,1983,p.206). This critical idea will be further explored later in this paper.

Gunnar Hagman agrees with Shah but goes one step further. He insists that there are additional causes for the increasing occurences and effects of disasters. He argues that it is not only population growth and immigration into disaster-prone areas that cause problems but new hazards which created by people. The patterns of land ownership, types of crops raised, irrigation practices, and the role of outside aid are factors directly related to disaster vulnerability.

The next question which must be asked is, Where are these disasters taking place? The Swedish Red Cross, in a recent report which reviews Red Cross Society and OFDA statistics, noted the findings in Figures 4-7:

Figures 4-7

These graphs clearly indicated that the highest death rates in disasters occur in the poorest countries. These countries also suffer the most casualties due to disasters per 100,000 people, as well as the largest number of people killed per 100 square kilometers (Hagman,1984).

III. Definition of Disaster

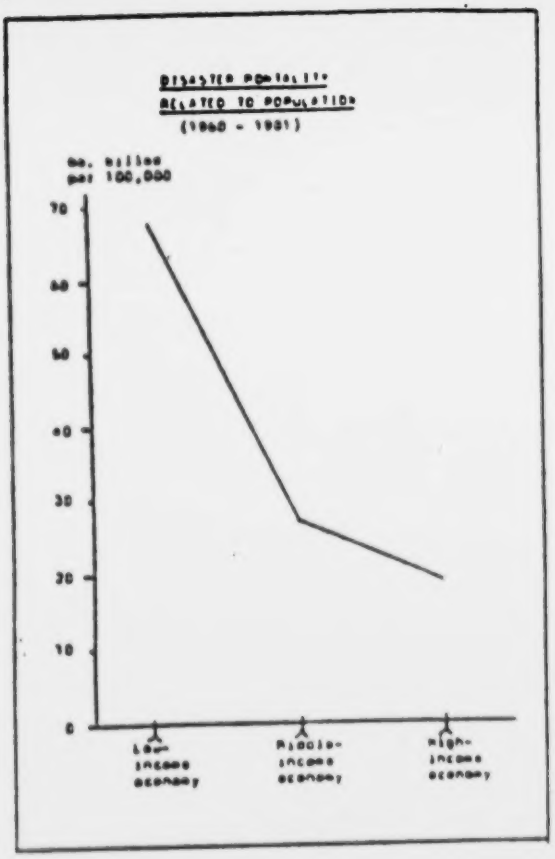

Figure 4

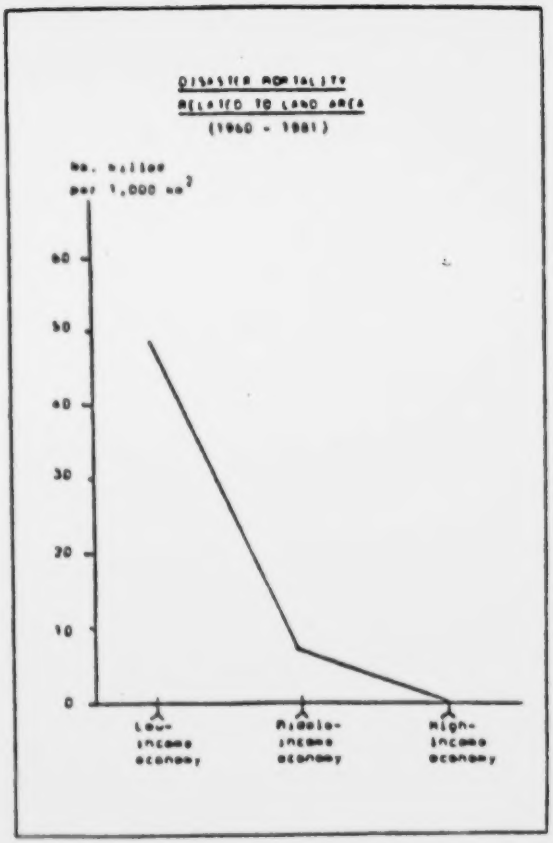

Figure 5

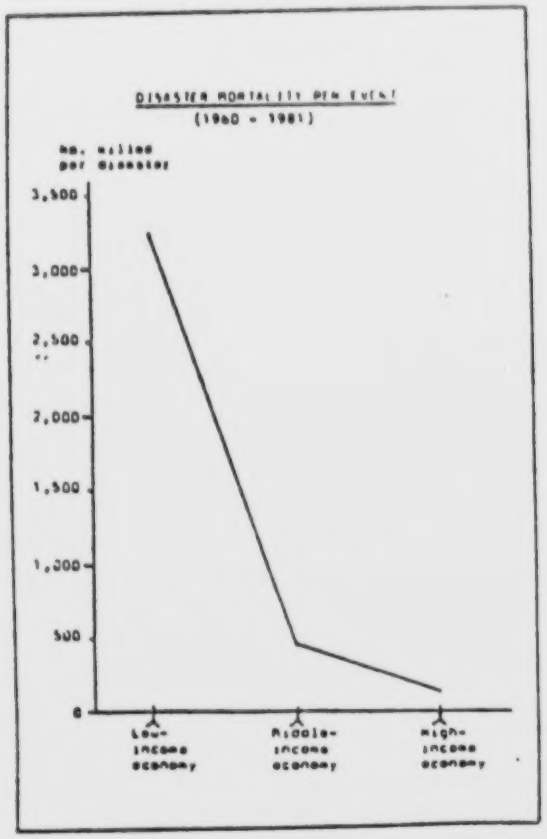

Figure 6

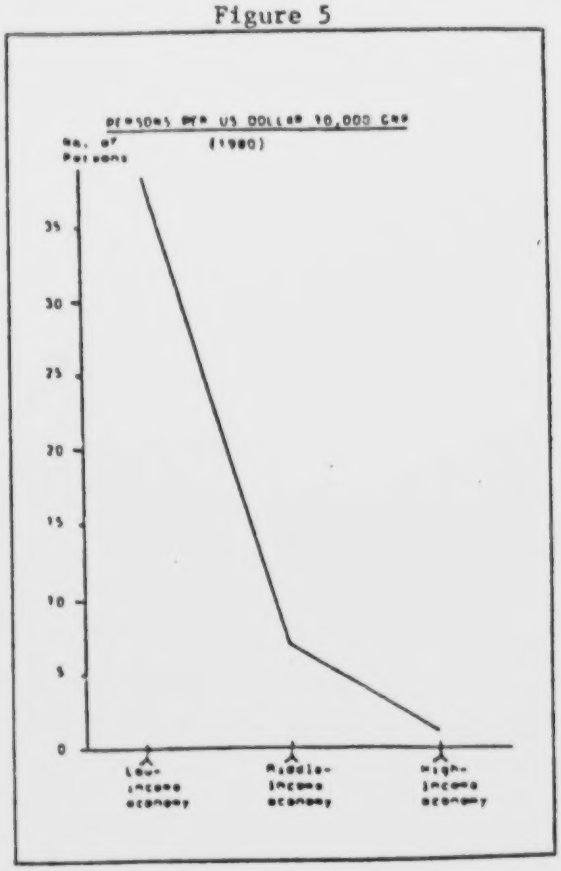

Figure 7

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While the information presented above offers a view of the number and kinds of disaster events there is a difference of opinion about the definition of "disaster." This question is not merely an academic one, because its answer will determine the quality of response to the situation. Frequently the definition reflects the interests of the persons offering it. The sociologist emphasizes the social patterns and structures in the event; the economist stresses the economic changes and losses; the journalist underscores the impact upon the human condition; the relief agency and its donors emphasize the impact of aid; the local government stresses the threat to national security caused by physical and social disruption (Hagman,1984,p.49).

At its most basic level, though this has not always been the case, there must be a differentiation made between the physical or natural phenomenon (cyclone, earthquake, flood, etc.) and the human suffering. If a flood rushes through an area uninhabited by people, then there is no disaster. In essence, there are at least two phenomena. The first is the physical phenomenon, the disaster agent or hazard (e.g., an earthquake) which sometimes triggers disasters, and the second includes the effects of one or several disaster agents--in other words, the resultant human suffering (e.g., famine). In many instances disaster terminology tends to confuse causes with effects. Cuny, in Disasters and Development, suggests that a disaster should be defined on the basis of its human consequences rather than on its causes (Cuny,1983). This points back to the comparison of the Managua and San Fernando earthquakes at the beginning of this paper. Was the San Fernando a worse disaster because it had a higher Richter scale reading (6.6) than

Managua (5.6), or should it be reversed based on the human suffering and death in Managua (4000-6000 dead) versus San Fernando (50 dead) (Kates,1980,p.8). Obviously Managua was a deadlier event.

Critical to the understanding of disasters then, is the concomitant notion of human vulnerability. In this sense disaster is defined as the interface between an extreme event and a vulnerable human group (Susman et al.,p. 264).

Another confusion centers on the use of the terms "natural" and "man-made" when describing disaster. In the past, a disaster was considered to be a sudden drastic natural event occuring in a particular place and time, which brought devastation to the people who were unfortunate enough to be living in the area. The "natural" disasters would include earthquakes, volcanic eruptions, violent storms, floods, and droughts among others. Their causes appeared to be random and accidental. Explanations from humankind's earliest days were religious. These phenomena were caused by angry gods who had decided to punish an undeserving people, or worse, were divine whims with terrible consequences for innocent and helpless human beings. Most cultures possess explanatory myths for powerful natural forces. The remnants of such myths are longlasting as can be seen in the ultra-rational and unspiritual realm of modern insurance business, where disasters are still referred to as "acts of God."

A sharp distinction has been made between these disaster agents and those considered "man-made." Armed conflicts, wars, and more recently, large

scale technological and industrial accidents are examples of this second group. The United Nations Disaster Relief Organization (UNDRO) notes four major categories in its literature on man-made disasters:

(a) Civil disturbances; riots and demonstrations;

(b) Warfare: conventional, nuclear, biological, chemical; guerrilla warfare, including terrorism;

(c) Refugees: forced movements of large numbers of people, usually across frontiers; and

(d) Accidents: transportation accidents, collapse of buildings, dams, etc., mine disasters, and technological failures such as pollution, chemical leaks, or nuclear accidents (Brown,1979,p.5).

One result of this dichotomy--and the use of the adjective "natural"--is that there is a marked preference for putting the blame on Nature, or at the very least, for the disaster agents to be seen as accidents and inevitable. Such an assumption presumes a particular kind of response. If disasters are the result of haphazard natural phenomena, then the logical response is to improve the ability to predict these events and prepare supplies for relief in order to relieve the resultant human suffering. In other words, the focus is on the natural event. There is an assumption that

the event or hazard or crisis will inevitably result in a disaster. According to a current definition, disaster prevention is principally concerned with "physical and urban planning, public works and buildings" which only indicates measures to avoid some damaging effects of violent impacts such as high winds, floods, etc.(Hagman,1984,p.25). Disaster prevention in the sense above is not directed much towards the root causes of disasters. There is little indication by those who work within this view of any awareness of the means to prevent the causes of floods and droughts, for example. But what if the cause of the disaster was seen not as the crisis event but, rather, the vulnerability of the community as shaped by particular social, economic, and political practices? A different kind of disaster response is mitigation which might include: access to food and employment, equitable land tenure, conservation of soil and forests, family planning, education, improved health care and better nutrition could function as major components of disaster prevention (Hagman,1984,p.25). Attempts at development are seen in this view as being successful if they result in the reduction of vulnerability. This idea will be further explored below.

The next section will examine the two different views of disasters and their subsequent approaches to disaster assistance. These will be explored with the intention of better understanding the assumptions of each, and understanding the implications for education.

IV. Human Ecologists

As any collection of knowledge is a creation of human beings in a particular historical moment based in particular social conditions, it is instructive to explore, if even briefly, the origins of the dominant school of thought regarding diasater assistance in order to better understand its historical beginnings and illuminate its assumptions.

Samuel Prince attempted in 1920 to systematically examine the changes wrought by an immense explosion of munitions in Halifax Habor during World War I. His study, entitled Catastrophe and Social Change, was a pioneer effort in the area of human behavior and disasters, and important in that it early noted the tremendous potential for change inherent in the disruption brought about by a disaster (Oliver-Smith,1973,p.15). In the 1940's a number of studies were conducted by the military that emphasized the psychological difficulties of populations that experienced heavy bombing during the Second World War.

In 1952 the National Research Council of the National Academy of Sciences organized the Committee on Disaster Studies (later renamed the Disaster Research Group). It was dissolved in 1962 and its work was passed on to the Disaster Research Center at Ohio State University.

An important work of this era was The Social and Psychological Consequences of a Natural Disaster by Bates et al. (1963). This study examined the long term effects of Hurricane Audrey which had devastated lower Cameron Parish in Louisiana. Attempts were made to determine the kinds of efforts which had been made to restore the community to prior conditions.

While this early examination of the sociology of disasters was underway, its influence was overshadowed by its more powerful partner, the research of disaster hazards by geographers. The geographers' work evolved into a school of thought about disasters. Geographic disaster hazards research began nearly thirty years ago under Gilbert White, who directed a flood control project in the United States at that time. This project expanded in scope from the amelioration of flood control problems to include a wide range of 'natural' and 'man-made' hazards. The results of this study were two major works by White (1974) and Burton et al. (1978). This led to hazards research in developing countries sponsored by the International Geographical Union (Watts,1983).

These two major works examine the human response to disasters. They present models of purposeful and nonpurposeful responses and portray individual reactions as rational within a context of culture and imperfect knowledge--that is, social context and political economy are seen to mediate individual perception. Society is seen as aggregates of individual decision-makers (Walker,1979).

This group emphasizes factors important to the response of the system to stress instead of factors relating to its cause. Within this group consideration and care is given to the difficulties associated with mobilizing people and resources to deal with multiple pre-, trans-, and post-impact needs and demands. The emphasis includes the use of high technology for hazard prediction and an efficient management scheme for assisting the stricken population to return to normal as quickly as possible.

This short history shows the context in which the early studies of disaster response sit. These early works and the emphasis by geographers on the natural hazards--rather than the social, economic, and political factors which contribute to vulnerability--shaped what was to become the dominant view of disaster assistance and heavily influenced the work of international agencies that respond to crises. In other words, this early work framed the problem and, in doing so, limited the range of response. Sociologists, whose work has been described as human ecology, supported this approach given their assumptions about human behavior and patterns of social interaction.

The term human ecology had its origins with the work of sociologist Amos Hawley (1950) who studied urban communities which he conceptualized as territorially based systems. This designation refers to a concern with human adjustment to the environment where community is a generalized form of that adjustment. The process of adjustment is accomplished, human ecologists reason, not independently by individuals but by means of a division of labor developed by the group. The structure of a given community is viewed as a collective adaptation on the part of a population to its total environment and is modified by the technological equipment in use. The demographic attributes of the population, namely its size, rate of growth, and age/gender composition are also considered as critical variables. As its name suggests, human ecologists view change by humans as similar to that found in biological evolution. The human ecology approach to sociology describes people in the aggregate and emphasizes adjustment. The natural hazards researchers assume a similar view. Both stress adjustment to a given situation , be it social or natural. The environment is assumed to be constant--or at least

given--and human agency is defined in relation to what exists. This is their underlying conceptualization of human activity. Both praise the use of technology as a shaper of the environment. Their influences have become intertwined throughout the international relief community. The combination of natural hazards geographers and sociologists of the human ecology school resulted in what has come to be the dominant approach in disaster assistance. For the rest of this paper that dominant school of thought regarding disaster relief will be refered to as human ecology extending its origins in sociology and including the work of the geographers.

This approach has been the dominant school of thought about disasters for decades. With its roots in geographic natural hazards research, the study, identification, and prediction of the disaster agent became a powerful focus. This focus was further influenced in the 1950s by the civil defense preparedness which grew from the Cold War. Thus much of the pre-disaster planning which occured at that time centered on disaster preparedness. This approach can involve simply the creation of plans prior to the event, or it may go so far as to include the stockpiling of strategic supplies, establishing appropriate communications and warning systems, developing evacuation plans, and providing training in medical assistance and rescue. The attempt implicit in this approach is to protect lives and property from danger and structure a response to the emergency and the immediate aftermath. While in recent years the human ecologist approach has become much more sophisticated, the model which has been generally followed is one which emphasizes external relief and whose preparation is best described in the terms mentioned above. The definition of a disaster which is assumed to be

correct is that one which emphasizes the need for outside assistance.

Reflecting the human ecologist approach, organizations such as the Red Cross, CARE, and governmental agencies which make up the international relief system have sought to deliver relief as quickly as possible to the stricken areas. Problems were essentially logistical ones and could be solved with improved management, better communications and large scale transportation networks. Beneath this humanitarian effort is a basic assumption about its goal. "The ultimate goal in such planning is to enable an effective and efficient start towards the restoration of normal routines." (Quarantelli,1979,p.99). The stated hope is to return life to normal as quickly as possible. As such, it appears that international disaster assistance is neutral aid. This international relief is delivered within a social, political and economic context which goes essentially unquestioned. The relationship between the industrialized and developing nations is only described in the terms of donor and recipient. Political and economic relations within the recipient country are internal matters and beyond the attention of humanitarian aid.

Development assistance is generally seen as separate and not directly connected to the emergency assistance required by a disaster. The development process itself is only brought into the picture in the context of suffering a temporary, but inevitable, setback in its drive to modernization through higher economic growth rates.

When outside assistance arrives from relief agencies, the central

government generally oversees and attempts to coordinate and distribute supplies. The mandate of the United Nations Disaster Relief Organization (UNDRO) is to help coordinate emergency relief. This assistance is targeted at the first of Haas' (1977) four phases of events in a disaster which include: emergency, restoration, reconstruction, and commemoration.

Little emphasis is placed upon education by the human ecologists. Where it is discussed, education--both formal and informal--is to be used to help central government workers (including the military) and some local leaders design plans for the coordination of disaster relief. In some cases (e.g, the Philippines, UNDRO 1984) detailed hazard mapping is produced where urban planners and engineers create a grid map of an area and identify critical facilities and their vulnerability to potential natural hazards.

The lack of emphasis on education lies in the implicit assumptions about the nature of human activity. Rather than stressing the centrality of human agency in the creation of culture and history, human ecologists underscore adaptation to what exists. This acceptance of the status quo ante removes from the debate of the disaster relief and educational policy questions of human agency and victims as actors. Education becomes merely a vehicle to pass on an already formed body of knowledge and skills. As such it can be packaged and considered an almost technical input. If there are victims who are helpless and at the mercy of natural forces, then relief is required. By definition, then, assistance takes the form of relief allowing the victim to adapt not only to the physical circumstances which existed prior to the disaster event but also to the pre-existing social, political,

and economic circumstances. In the human ecology literature about disaster hazards, critiques of the socio-economic and political situations are considered inappropriate. They are outside the realm of disaster studies. What becomes necessary is the adaptation of the groups within the society. Should one group--almost always meaning the poor and less powerful politically--within that society suffer more than another, then greater emphasis is placed on the readaptation of that group. That the existence of such a group may actually cause the disaster is never questioned--but will be explored further below.

An example of the solely technical view of education as a part of emergency relief can be found in the U.N. educational program in Lebanon (Reiff,1984). The Southern Lebanon Reconstruction Programme, supported by UNICEF and the Tunis Pledge, provided approximately thirty million dollars of aid to Lebanese in the area. (Palestinians receive assistance from a separate agency, the United Nations Relief Works Agency.) The overwhelming emphasis of the program was put on physical infrastructure. The major thrust was to quickly construct school buildings. As this writer, who was in southern Lebanon and Beirut in 1982, can attest, there was severe destruction resulting from factional fighting and the recent Israeli invasion. There was clearly a need for school construction, among many other things. In spite of this need, great mistakes were made, limited resources poorly spent, and the question remains concerning the overall usefulness of the educational objectives. Lack of insight--or concern--regarding the social, political, and cultural reality of the communities proved to be a serious impediment to the implementation of a potentially important program. The reconstruction program

centered on destroyed or seriously damaged schools and homes. A planned network of new public schools was implemented. On some occasions civil engineers over built low quality schools. The engineers were under contractual pressure to construct and did so, in some cases, in still empty villages.

The parallel World Bank project of school mapping and clustering faced similar problems of implementation. Based on rational cost-benefit criteria of increasing teacher-pupil ratios and class size, the World Bank approach had difficulties because teachers and parents preferred to support village schools for reasons of community cohesiveness and security (Reiff,1984).

In the joint reconstruction program, in the few instances where emphasis was placed on the teacher in the classroom, there were few linkages to work activities, out-of-school learning, or what may be described as education for development. It is reported that the assistance agencies supported "the quantitative capacity of teacher training facilities ability without concern for the relevance of programmes and the introduction of new teaching/learning techniques."(Reiff,1984,p.24).

While the disater agent involved was war and not a natural hazard, the similarities in terms of destruction and response are strong. The Lebanon relief attempts emphasized the rebuilding of physical infrastructure and the strenghthening of the capacity of the central educational authority, focusing on administrators and managers. Such an emphasis functions to recreate the previous social relations and renew relationships of power that

existed prior to the emergency.

McGinn (1984) presents a typology of kinds of disasters based on whether they merely disrupt or severely disorganize social cohesiveness. He completes his matrix by including the two groups in the affected community who might control the educational process, namely, the dominant or subordinate groups. In his case of "education to serve the dominant in the context of disorganization"--of which the southern Lebanon situation is an example--he notes that prior structures of authority and responsibility no longer stand. He adds that the security forces of the dominant are no longer feared and that both the system of production and the system of its management are damaged. In order to reestablish the original order, the dominant group must not only assist recovery, but must rebuild. In these situations, McGinn argues, the three kinds of educational programs--ideology, management, and production--must be carefully integrated in order to ensure the reestablishment of the previous system of authority.

This part of McGinn's analysis can be used to describe the human ecologist approach to education in disaster assistance. Given the human ecologists' assumptions about human activity described above, the assumed role of education as an essentially neutral mechanism functioning to pass on information which might facilitate recovery (first aid, rudimentary notions of safe building), and their refusal to consider social organization (social, political, cultural, and economic interrelations), this approach at least implicitly accepts the recreation of previously existing social relations. Education, then, is conceptualized by human ecologists--implicitly or

explicitly--as a mehanism for readaptation. In words not used by this group, education functions to retrain people for the production process and to relegitimate that process for those involved (McGinn,1984). When educational relief is permitted to reproduce unjust social structures unchallenged, this "relief" may contribute to underdevelopment and further exploitation and dependency. This assistance may, in effect, increase the vulnerability of a community to the next crisis and hence raise the likelihood that the crisis will result in disaster.

In the case of refugees and displaced persons, when educational services are provided they usually offer language training and some preparation for acculturation for those who are moving to a country of asylum. For those who remain in camps attempts are made to increase literacy along with some specialized training for income generation, usually in saleable crafts and arts. This does not include those, of very few number, who already possess high levels of education (Hamrell,1967). This is consistent with the notion of adaptation to the existing sructure of social relations.

The type of training, of course, will depend upon the country of destination. Refugees may remain in the country of asylum, resettle in a third country, or repatriate to their country of origin. In any case, when training is provided it will be a function of: the employment opportunities available, the match between economies of origin and destination, and the

earlier experience of the individual refugee.

Training for resettlement may require much more than particular skill training. Ethnic Somalis fleeing the Ogaden in Ethiopia to Somalia or Rwandese who cross into Tanzania mat assimilate with relative ease while Laotians and Cambodians resettling in France or the United States face serious differences in language, political system, culture as well as economy. Employment in the modern sector may require not only literacy training but education in entrepreneurial and basic management skills. However, even when this sophisticated training is available , serious questions remain about the ideology which is infused in the assimilation training and the situation which actually awaits the refugee in the final country of asylum (Ford Foundation,1983).

V. Marginalists

The second school of thought regarding assistance would include researchers Hewitt (1983), O'Keefe (1975,1976), Susman (1983), Wisner (1976,1983), Watts (1978,1983), Waddell (1983), and the French agriculturalist Copans (1975,1983). These writers among others present the more recent argument that vulnerability to disasters is an integral part of the "development of underdevelopment." They insist that in order to understand the daily conditions of a population, one must examine the socioeconomic situation in relation to the physical environment. This

relationship points to a population's vulnerability which differs by social class. Generally speaking, poor people are more vulnerable than rich people. Poor people have few resources to help recover from disasters. Often they live on marginal land which is situated on deltas, near fault lines, in flood plains, or steep hillsides in both urban and rural areas. This is so not by simple rational decision, but because choice and safe lands are held by the wealthy and more powerful. In this regard, Cuny (1983) speaks of "classquakes."

This school, while recognizing the technical and technological contributions of the human ecologists, posits that disasters are not randomly caused natural accidents, but instead, are fundamentally tied to both a deteriorating physical environment and oppressive socioeconomic conditions. These conditions are brought about and supported by particular economic relations which create the marginalization and dependence of the developing nations and regions upon the industrialized countries (Susman et al, 1983).

The testing of this idea requires the examination of two notions mentioned above: the deteriorating physical environment and oppressive socioeconomic conditions as they both exist in the Third World. Floods and droughts will be used as examples to examine the deteriorating physical environment.

Between 1960 and 1981 approximately 80,000 people perished and 220 million were affected by floods, according to OFDA figures. Of those who died 80 percent lived in low income countries and 70 percent lived either in

India or Bangladesh. There is frequent flooding in Bangladesh, India, and China with heavy losses and severe destruction. These countries have acknowledged their increasing flood problem as the result of deforestation of watersheds and heavy snow melt in the Himalayan mountains. Deforestation and simultaneous urbanization by migrant poor from the rural areas near rivers have become enormous problems in Brazil, Argentina and several other Latin American countries. Many of the squatters in the city of Delhi live in unauthorized subdivisions on the flood plain of the Yamuna River and are very vulnerable to flooding. Other Asian cities with flood-prone shantytowns are Manila, Bangkok, Dhaka and Calcutta (Hagman,1984).

The cities mentioned above have increased in their vulnerability to flooding. Upriver deforestation is a major cause of increased flooding. The stripping of hillsides of trees for firewood, fodder or farming aids the erosion process and subsequent loss of topsoils. The result is the destruction of the sponge effect of soil, vegetation, and water. Vegetation keeps the soil in place; soil gives life support to vegetation, and both depend on water with which they interact. The natural sponge effect created by these three agents is the superior method of preventing floods, as well as droughts, and plays an important part in preventing landslides and avalanches. This interaction also affects the local climate by evapotranspiration which helps determine humidity, temperature, and cloud cover (Hagman,1984,p.93).

When this interaction is destroyed, rain creates surface runoff and erosion occurs. The land is denuded and the people will move to other land

in order to meet their needs. When the monsoons return, the hillsides which previously soaked up the rains now release water in shorter and greater peaks rather than gradually as before. Soil losses due to deforestation and depletion of vegetation cover are reaching enormous proportions. India loses 11,400 tons of soil every minute. The Ethiopian highlands lose almost one billion tons a year, or an average of 32 tons each second. That can be imagined as a square slice of earth five meters by five meters and one meter thick that disappears each second (Hagman,1984).

The destruction of the highland forests cannot be blamed on irrational and selfish aims of peasants who live in the region but, rather, on the land tenure and distribution systems, agricultural and pricing policies, exploitation of natural resources by industrial countries, and also misplaced development efforts (Susman,et al.,1983). Greater demands for fodder for increased livestock density in Central America, Uruguay, Iraq and Ethiopia are causing greater vulnerability to flooding and drought. Mountain slopes and runoff as mentioned above are increasing the vulnerability of Nepal, Colombia, Peru, and Bolivia. The tropical rainforests of Brazil, Zaire, and Indonesia are both attractive for exploitation and particularly sensitive given the fragile ecosystem of the rainforest (Hagman,1984).

Drought is seen as the effect of too little rain and usually made synonymous with famine. But many in the field argue that it is improbable that fluctuation in rainfall alone causes a famine (Copans, 1983). The same climate may have completely different effects on different countries. Drought may work as the final blow to members of a society who have been

forced onto marginal farmland and who are already suffering from malnutrition and poor health.

In a recent UNDRO publication, that organization noted that in thirty-four of the forty-five nations south of the Sahara, an estimated 200 million people, which is about 30 percent of the population of all of Africa, had been hit by the drought crisis in one way or another. UNDRO pointed out, however, that the situation was not a "flash phenomenon" but had been building up over the past two decades and was caused by a number of factors including: economic stagnation, declining food production, economic devastation caused by regional civil strife, high population as well as drought (UNDRO,1984).

Again, the issue of land ownership and the emphasis on cash crops rather than food production for local consumption (a mistake too frequently made by development agencies) are powerful causes behind famine. While the problem of lack of water is exacerbated by many of the same behaviors mentioned as causing flooding, there is a secondary problem. Land lost to desert, by the process named desertification, is also usually blamed on drought alone. Desertification accounts for serious loss of farmland in China, Mozambique, parts of India, but most notably in the Sahel.

A classic example of how external influences can drastically affect the vulnerability of a nation is the case of Niger in the 1950s when France encouraged its west African colonies to change from subsistence agriculture to the production of groundnuts, an exportable cash crop. France supported

the growth of such production with artificially high guaranteed prices. Niger, along with Chad, Mali, Upper Volta, and Senegal, became dependent on groundnut production. In Niger, one million acres of the best farmland eventually were utilized for groundnuts, and agricultural lands normally left "fallow were no longer available to the large number of nomadic pastoralists of that country for grazing in the dry season. The nomads moved north and grazed those lands intensively which resulted in desertification and increased vulnerability to drought for them. At the same time, the lands used for groundnuts were overworked and yields declined as prices fell relative to staple food so that farmers became poorer. This occured in 1968 at the beginning of the Sahel drought. By 1974 five percent of Niger's population was completely dependent on food aid.

Since that time the government of Niger has become more aggressive with livestock control, drastically reducing groundnut cultivation, and with the growth of millet and sorghum, traditional drought resistant crops, lessening the vulnerability of its population to famine. Chad, Mali, Senegal, and Upper Volta, on the other hand, have shifted their best arable lands to cotton, a cash crop, and are currently suffering from both drought and famine, depending upon 600 million dollars of foreign food-related aid and 100 million tons of imported food (Grainger,1982). A similar problem was caused by Great Britain in east Africa. After the Second World War Britain faced a severe shortage of fats and oils and brought an area the size of Connecticut under groundnut cultivation in Kenya in order to meet its shortage. The results were similar to those described immediately above (Rotberg,1983).

Today there exists what has come to be known in agricultural development literature as the "hamburger connection" in Central America. Some of the best arable lands which were formerly used for subsistence farming have been collected into vast ranchlands owned by a small cattle oligarchy. These ranchlands are used to graze huge herds of cattle which are bought cheaply by popular hamburger restaurants in the United States. Thus increased vulnerability of the marginalized farmers is caused by rising levels of malnutrition among them and their children, which is caused by the "need" for grazing lands and hence less good farmland for food crops which answers the demand of North Americans for cheap hamburgers (Jackson,1979).

The above are specific examples of the socioeconomic conditions imposed both from without and within which result in physical and political marginalization. The members of the marginalist school would support a dependency theory where the underdevelopment of a region or society is a process which is linked to the development of another region. Dependency is used to emphasize the notion that the causal relationship between the development of central societies and the underdevelopment of peripheral societies is an historical and an intentional process. It is not necessary in this analysis that the rich country physically dominate the poor. It is sufficient that the leaders and elite of the poor countries hold attitudes, values, and interests consistent with those in the rich countries. The process whereby the urban area dominates the countryside is identical to that which occurs between countries. The actual transfer of resources can take place in a number of ways including outright plunder, colonial or neo-colonial relationships, or the operations of multinational corporations.

(Fagerlind,1983). Underdevelopment in this sense is a manifestation of the relationship between the industrialized capitalist countries, or center of the world economic system, and the nations of the Third World constituting the periphery.

Within the periphery there has been the establishment of a capitalist formation designed to serve the needs of the capitalist center. This penetration has led to particular economic and geographic structures which point to the problems of the development process (Amin,1974). Underdevelopment had previously been seen as a state out of which a poor country had to emerge, but in this view is now seen as a continual process of impoverishment based on a world economy which perpetuates technological (and cultural) dependency and unequal exchange. A parallel view is held in regard to the active underdevelopment of poorer classes by richer ones within poor countries, as well as between rich countries and poorer ones (Susman,1983). This relationship is at the heart of marginalization and the driving force behind increased vulnerability.

Susman et al. perhaps best summarize the theory of marginalization and its relationship to disaster vulnerability in the Third World.

> "Disaster proneness is the result of the interface of a population undergoing underdevelopment and a deteriorating physical environment. The provision of relief usually reinforces the status quo ante, namely the process of underdevelopment that produced such vulnerability in the first place.... Thus, reinforcement of the status quo leads to further marginalization which, through development 'aid' and capital transfers, encourage the continuation of the development of under-development. This exacerbates the process of

> increasing marginalization that continually underdevelops a population's socioeconomic base and encourages a deterioration of the physical environment. Such a causal pattern increases vulnerability to disaster." (Susman et al.,1983,p.279).

The educational approaches implicit in the human ecologist school were mentioned above. For the marginalists, education offers very different possibilities. They would suggest that education is more than the passage of technical information prior to the emergency and should not function to assist central governments and ruling elites to get back to normal as quickly as possible (Hewitt,1983). To quote Quarantelli a second time, "the ultimate goal in such planning is to enable an effective and efficient start towards the restoration of normal routines." It is obvious that to restore normal routines means to facilitate the reimposition of oppressive relations of urban and rural marginalized peoples with their national elite, and to continue the center-periphery relations with the industrialized nations. Education alone has been shown unable to disrupt these relations, rather it usually functions as the legitimator of these same existing relations (Irizarry,1980, Giroux,1981). Yet in the case of a disaster where there may be a tear in the social fabric, unique possibilities for change may result.

Just how drastic this rip appears depends not so much on the magnitude of the natural hazard but on the social organization of the stricken community. In highly integrated nations such as the United

States, there are sufficient resources and organizations to absorb disasters which could prove catastrophic in highly centralized developing countries (Quarentelli,1979).

In developing nations--and marginalized communities within industrialized countries--this disruption of the community, and hence in the production process, offers potential for change that might not otherwise be possible. Members of both schools of thought would argue that disasters disrupt the social order. They would agree that disasters not only bring about physical suffering but also sharpen the contradictions and inequalities that exist in that particular society. The human ecologists see a need for intervention to quickly restore social order and define assistance in terms of technical aid and construction, and immediate relief in the form of material goods. Marginalists would argue that because the previous social relations are temporarily torn and because victims have, by necessity, taken responsibility for their lives in ways not normally known, any assistance should foster such action as it is seen to reduce socioeconomic dependence and vulnerability and hence also reduce disaster vulnerability. In this regard Fernandes (1979) and Cuny (1983) suggest that disasters may be opportunities for positive change.

As disasters affect nations differently, they also diffentially affect communities within a single country. That part of a society which controls considerable resources and which clearly dominates in terms of power will be most interested in restoring its position. To

the extent that this group's power is disrupted by the disaster, the group that is subordinate to it will have possibilities for change. This understanding is coupled with a definition of education whereby it functions to resolve the three problems of: production and accumulation of capital, the management of its systems of relations, and the legitimation of them both. Based on this potential for change and the nature of education, McGinn (1984) offers a framework which differentiates between a disruptive and more serious disorganizing disaster and frames these situations against the particular group--dominant or subordinate--which is attempting to carry out the education. It is clear from his work that the only possibility for structural change occurs after a disorganizing disaster, where the subordinate group attempts to define and own the educational process. In all other cases, the dominant group to a greater or lesser degree provides education in the form of training to restore production and restore the hegemony which legitimates its system of management and continued domination. In those cases where the educational system was not restored, the state was required to use violence. He cites the examples of Nicaragua and Guatemala. Iran under the Shah should be included as should specific instances in the Philippines and Ethiopia. In place of Haas' phases of disaster recovery: "emergency, restoration, reconstruction, and commemoration," he offers new names for those phases which capture the critique of the marginalists, "security, resocialization, re-domination and reproduction." (McGinn,1984,p.17).

Where there is possibility of change, after a disorganizing

disaster and where the subordinate group determines the educational process, there must be a break from the previous assumptions and educational practices. Of course, education can act as one, but not the only force of change. Of greater importance is economic independence. After a sufficiently serious disaster which prevents the political and economic center from reestablishing its hegemonic dominance, the community is faced either with isolation and complete reliance on its own resources or with reliance on sympathetic workers from private voluntary agencies. After meeting immediate (emergency) needs, the community begins the process of restoration and reconstruction. Cuny (1983) describes how a cooperative system in Guatemala grew to include training for local masons who both worked in construction and taught methods of earthquake resistant building. This process brought with it greater collective work and resulted in the formation of a local construction firm from the cooperative, the availability of loans and credits, as well as training in the skills of safe building. Most importantly, however, was the process whereby the campesinos were in charge of their own development work--rather than recipients of relief. It is in this crucial moment that individuals within oppressed communities see themselves as actors and as capable of building their own society.

At that moment the former hegemony of the ruling elite is cracked and possibilities for action occur. Paulo Freire (1970) has described the educational process of problematization or conscientization followed by community action designed to control the group's own future.

Economic action might include the development of efficient cooperatives as described by Cuny, along with the training of community members in efficient technologies, marketing, and law to reduce exploitation. This should be tied to training in participatory methods within a democratic decision-making process. This would attempt to create a new ideology based upon participation and benefit of all (McGinn,1984).

A definition of development emerged from the 1984 Institute on Education for Development in the Context of Disasters, held at the Harvard Graduate School of Education. That definition described development as a process by which a people's vulnerability (physical, economic, political, and socio-psychological) is reduced and is consistent withe marginalists' approach to disasters. Two examples of vulnerability reduction--call it disaster assistance or development aid--and training are taken from American Friends Service Committee (AFSC) projects. The first took place in Kampuchea(Cambodia) where, along with other developmewnt efforts, AFSC works in agriculture, especially animal health and animal traction (there is a shortage of tractors and fuel in Kampuchea). Animal traction, in the form of a yoke across a pair of bullocks, is the tradditional mode of power for plowing. While used for centuries, the yoke is extremely inefficient in transforming the power of the bullocks to pulling the plow. An AFSC veternarian working with others devised a kind of collar allowing the bullock to pull with its shoulders rather than with its neck. This allowed a single animal to plow instead of a pair and subsequently increased plowing capacity by fifty percent given the same number of

animals. Such a development permits greater self-sufficiency in food production reducing vulnerability to future crises which affect the capacity to grow food. Education and training are required at grassroots and cooperative levels to introduce the new technology (Johnson,1984). The freeing of so many draft animals substantially changes the earlier relationship of those who owned animals and those who did not.

The second example is also from AFSC's work. It comes from the program for land improvement in Goundam, Mali. Begun as an aassistance program for drought-displaced nomad families, the area is now a center for education, marketing, and politics. The nomads had given up herding as a primary way of life because of drought, over-grazing, and an inability to overcome the severe crisis of the early 1970's which occurred throughout the Sahel. The former nomads settled along seasonal branches of the Niger River irregularly blessed with rainfall. Failure if the rains and the subsequent absence of a rising river bring potential for disaster and displacement. AFSC focused its education, financial, and work assistance on employing and training community members to improve dams, level lands, and remove blown sand thus improving water retention of the land. Salaries were provided for labor-intensive land repair (this allowed many familes to receive an income rather than providing money to a single owner of a bulldozer). Those doing the work gained new skills--both skills directly related to agriculture and those dealing with organization for self-sufficient work. The community developed confidence in its efforts for survival,

even if traditional methods proved ineffectual, and thus recognized their own abilities to deal creatively with change (Johnson,1984).

Complete success at such endeavors is by no means assured. There are frequent reminders of the weakness of education as a social change agent. In addition there are forces within the state which will attempt to reinstate their dominance. In the case of Guatemala, two relief workers were so successful in the attempts to help create independent communities that as such they posed a threat to the previous socioeconomic relations and were killed (Cuny,1983). Education can serve to support critical analysis, and spread a counter-hegemonic ideology where participation replaces the previously imposed class system of subordination. The success of the Mali project points to this direction.

VI. Conclusion

This examination leaves the reader with two very different views of disasters, the type of assistance required, and the kinds of educational policies which would logically result. From the human ecologists come policies which essentially leave the status quo unquestioned but perhaps prepare the population to protect existing property and so to limit the destruction to the productive process. Skills training resupplies the workforce and the ideological function of schooling relegitimates the previous social relations.

The marginalists see disasters not as accidents of nature but, rather, as a set of acute events that outstrip a society's ability to cope with them. The examples cited earlier of the Honduran/Australian hurricanes and the Nicaraguan/Californian earthquakes point clearly to differences in coping abilities between so-called First and Third World countries and the horrible inequities which result. What must be examined and redressed are the sets of events and relations which leave these societies vulnerable. Therefore development is defined as the absence of vulnerability of communities to disasters. Any relief, assistance or development work which increases that vulnerability is not relief, does not assist the vulnerable group, and develops only dependency. Education can work as a support to efforts to reduce vulnerability by providing needed skills and supporting a new participative ideology in the attempt to become independent from the previously dependent and oppressive conditions.

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